

REMARKS

Applicant requests favorable reconsideration and allowance of the subject application in view of the preceding amendments and the following remarks.

To place the application in better form, Applicant submits herewith a substitute specification, which includes a new abstract. For the Examiner's convenience, also provided is a marked-up copy of the original specification showing the portions thereof which are being changed. The substitute specification includes the same changes as are indicated in the marked-up copy. Applicant's undersigned attorney has reviewed the substitute specification and submits that the substitute specification contains no new matter.

Claims 1-11 are presented for consideration. Claims 1 and 11 are independent. Claims 1, 4, 6, 10 and 11 have been amended to clarify features of the subject invention. Support for these changes can be found in the original application, as filed. Therefore, no new matter has been added.

The Examiner required that Figures 15-18 be labeled as "PRIOR ART." By separate papers, Applicant submits corrected Figures 15-18, each of which has been so labeled. Favorable consideration is requested.

Applicant requests favorable reconsideration and withdrawal of the rejections set forth in the above-noted Office Action.

Claims 1-5 and 9-11 were rejected under 35 U.S.C. § 103 as being unpatentable over U.S. Patent No. 6,255,795 to Ebihara et al. in view of U.S. Patent No. 5,264,982 to Cox et al. Claims 6-8 were rejected under 35 U.S.C. § 103 as being unpatentable over the Ebihara et al. patent in

view of the Cox et al. patent, and further in view of U.S. Patent No. 4,667,139 to Hirai et al. Applicant submits that the cited art, whether taken individually or in combination, does not teach many features of the present invention, as previously recited in claims 1-11. Therefore, these rejections are respectfully traversed. Nevertheless, Applicant submits that independent claims 1 and 11, for example, as presented, amplify the distinctions between the present invention and the cited art.

In one aspect of the present invention, independent claim 1 recites a stage apparatus including a first-direction guide which extends in a first direction and can move in a second direction perpendicular to the first direction, a first driving mechanism which moves the first-direction guide in the second direction, a movable body which can be guided by the first-direction guide to move in the first direction, and a first electromagnetic force generating device which generates an electromagnetic force in the second direction between the movable body and the first-direction guide in synchronism with acceleration of the first-direction guide in the second direction, so as to keep the movable body and the first-direction guide in noncontact with each other.

In another aspect of the present invention, independent claim 11 recites a method of controlling a stage apparatus. The method includes a driving step of moving a first-direction guide, which extends in a first direction and can move in a second direction perpendicular to the first direction, in the second direction, a first control step of controlling at least a pair of electromagnets, which generate electromagnetic forces in opposite directions along the second direction between a movable body, which can be guided in the first-direction guide to move in

the first direction, and the first-direction guide, to keep the movable body and the first-direction guide in noncontact with each other, and a second control step of controlling driving of the electromagnets, in synchronism with acceleration of the first-direction guide in the second direction by the driving step, to apply an accelerating force in the second direction to the movable body.

By such an arrangement, in the present invention, an electromagnet force can be generated in a second direction between a movable body and a first-direction guide in synchronism with acceleration of the first-direction guide in the second direction, so as to keep the movable body and the first-direction guide in noncontact with each other.

Applicant submits that the cited art, whether taken individually or in combination, does not teach or suggest such features of the present invention, as recited in independent claims 1 and 11.

The Examiner relies on the Ebihara et al. patent for showing a stage apparatus that includes a first-direction guide which extends in a first direction (X-direction) and can move in a second direction (Y-direction) perpendicular to the first direction, a first driving mechanism which moves the first-direction guide in the second direction and a movable body which can be guided by the first-direction guide to move in the first direction. As noted by the Examiner, however, the Ebihara et al. patent does not teach or suggest at least the first electromagnetic force generating means of the present invention recited in independent claim 1, for example. In turn, the Ebihara et al. patent does not teach or suggest the first and second control steps of the present

invention recited in independent claim 11. Accordingly, the Ebihara et al. patent does not teach or suggest many features of the present invention, as recited in independent claims 1 and 11.

Applicant further submits that the remaining art cited does not cure the deficiencies noted above with respect to the Ebihara et al. patent.

The Cox et al. patent teaches using electromagnets 13, 15, 17 and 19, each of which exerts an attracting electromagnetic force on a steel guide beam 1. According to the Cox et al. patent, in order to keep the size of an air gap 23 between the electromagnets and the steel guide beam 1 constant, the currents through the electromagnets are controlled based on the measured size of the air gap 23. This is discussed in more detail in the Cox et al. patent at column 3, lines 42, to column 4, line 19.

Applicant submits, however, that the Cox et al. patent fails to teach or suggest controlling an electromagnet based on an acceleration generated by movement of a guide. Applicant further submits, therefore, that the Cox et al. patent fails to teach or suggest salient features of Applicant's present invention, as recited in independent claims 1 and 11 of generating an electromagnetic force in a first direction between a movable body and a second-direction guide in synchronism with acceleration of the second-direction guide in the first direction.

The Examiner relies on the Hirai et al. patent for showing a second direction guide and a movable body being provided at an intersection of first and second direction guides for the purpose of making a table device. Applicant submits, however, that the Hirai et al. patent, as with the Ebihara et al. patent and the Cox et al. patent, does not teach or suggest the salient

features of Applicant's present invention, as recited in independent claims 1 and 11, which have been discussed above.

Accordingly, Applicant submits that the Hirai et al. patent and the Cox et al. patent add nothing to the teachings of the Ebihara et al. patent that would render obvious Applicant's present invention, as recited in independent claims 1 and 11.

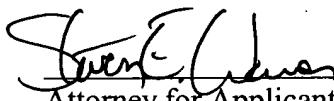
For the foregoing reasons, Applicant submits that the present invention, as recited in independent claims 1 and 11, is patentably defined over the cited art, whether that art is taken individually or in combination.

Dependent claims 2-10 also should be deemed allowable, in their own right, for defining other patentable features of the present invention in addition to those recited in independent claim 1. Further individual consideration of these dependent claims is requested.

Applicant further submits that the instant application is in condition for allowance. Favorable reconsideration, withdrawal of the rejections set forth in the above-noted Office Action and an early Notice of Allowance are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010 All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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